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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/874,058	06/06/2001	Toshiyuki Tamura	209435US0	5640

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EXAMINER

MCKANE, ELIZABETH L

ART UNIT	PAPER NUMBER
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1744

DATE MAILED: 03/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 09/874,058	Applicant(s) TAMURA ET AL.	
	Examiner Leigh McKane	Art Unit 1744	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1, 6, 8-12, 14, 15, 19 and 22 is/are rejected.
- 7) ☒ Claim(s) 2-5, 7, 13, 16-18, 20, 21, 23 and 24 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>091001, 021402, 091703</u> | 6) <input type="checkbox"/> Other: ____ |

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Claim Objections

1. Claim 15 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Specifically, claim 15 limits the temperature characteristic controller to benzyl (C₇H₇). Claim 15 is dependent upon claim 14, which limits the temperature characteristic controller to having at least one benzoyl group (O=C-Ph). As benzyl lacks an oxygen altogether, it cannot have a benzoyl group, and thus claim 15 fails to limit claim 14.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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4. Claims 1, 6, 8-12, 14, 15, 19, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al (JP 56-166093) in view of Naito et al (US 5,663,115A).

Kobayashi et al teaches a reversible temperature indicating material including an electron donating compound (crystal violet lactone), an electron accepting compound (a phenol), and a temperature characteristic control which is solid at room temperature (benzhydrol, benzoin, triphenylmethanol, methyl benzylate, benzyl group-containing compounds, phenacyl alcohol, phenyl ether alcohol). Kobayashi et al fails to disclose a reversible material causing reversible transformation between crystal and amorphous, or reversible transformation between phase separation and non-phase-separation.

Naito et al teaches a similar temperature indicating material using an electron donating compound (crystal violet), an electron accepting compound (phenol), and a reversible material causing reversible transformation, wherein the reversible material is selected from cholesterol, stigmasterol, pregnenolone, etc.. See col.12, lines 57-64. Naito et al discloses that the reversible material has the function of decreasing the concentration of the electron donating compound and the electron accepting compound (col.4, lines 41-43) as well as reducing the thermal energy required to melt the crystal in the crystallizing-to-amorphous transition. For these reasons, it would have been obvious to add the reversible material of Naito et al to the composition of Kobayashi et al. See Naito et al, col.1, lines 61-64; col.4, lines 3-8; col.9, line 51 to col.10, line 29.

Allowable Subject Matter

5. Claims 2-5, 7, 13, 16-18, 20, 21, 23, and 24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. The following is a statement of reasons for the indication of allowable subject matter: Kobayashi et al teaches a temperature indicating material containing a temperature characteristic controller but fails to teach or suggest that the temperature characteristic controller is (a) an aromatic alcohol having a phenol hydroxide group, (b) a piperonyl alcohol, (c) benzyl DL-mandelic, (d) benzoin isopropyl ether, (e) benzyl phenyl ketone, (f) methyl 2-benzoylbenzoate, (g) benzyl 2-naphthyl ether, (h) 1-benzyloxy-2-methoxy-4-(1-propenyl)benzene, (i) 4-benzyl biphenyl, or (j) terphenyl.


Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leigh McKane whose telephone number is 571-272-1275. The examiner can normally be reached on Monday-Wednesday (7:15 am-4:45 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert J. Warden can be reached on 571-272-1275. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Leigh McKane
Primary Examiner
Art Unit 1744

elm
8 March 2004